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DE 004429503 A1 **US 6024222 A**

(58) Field of Search

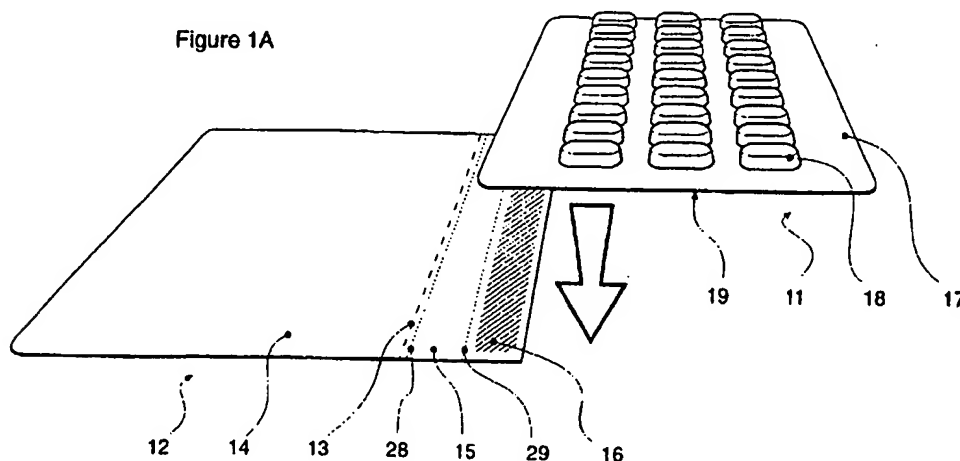
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INT CL⁷ A61J 1/03 , B65D 75/36
ONLINE:WPI,EPODOC,JAPIO

(54) Abstract Title

Blister pack

(57) A carded blister pack has a mounting card (12) with a hinged spine element (15) and an adhesive edge strip (16) attached to an edge region of a preformed blister pack (11) so that the card (12) may be folded to form a cover. The card may include a further portion at the opposite side of the adhesive strip, which portion may be removable along a line of weakening, respective blister packs may be attached adjacent a series of spines or multiple blister packs may be attached along a single spine and the blister packs may be of triangular or curved shape. A machine for assembling carded blister packs may include mounting card and blister pack storage magazines, means for conveying cards through an adhesive application station into juxtaposition with the blister packs and a press station.

Figure 1A



At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1995

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Figure 1A

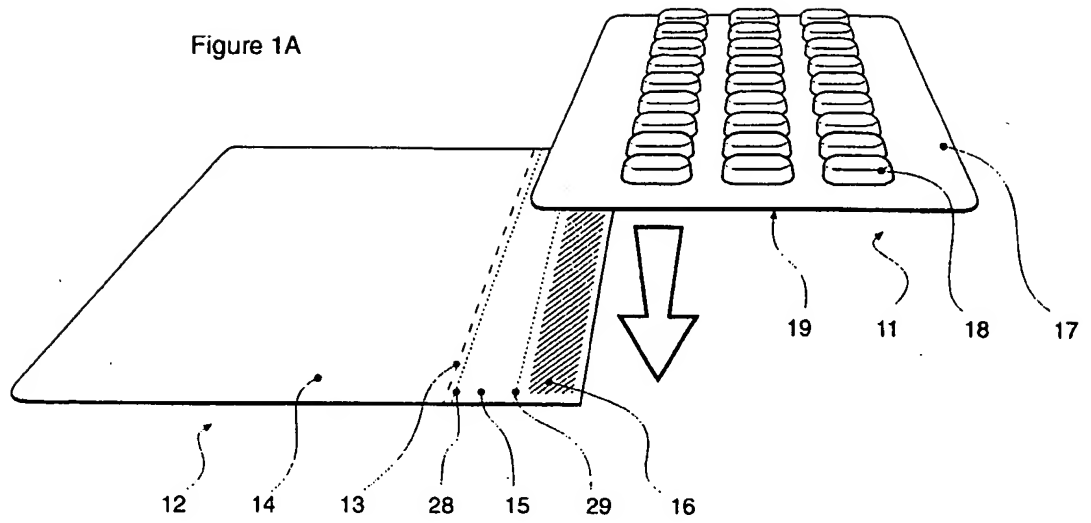
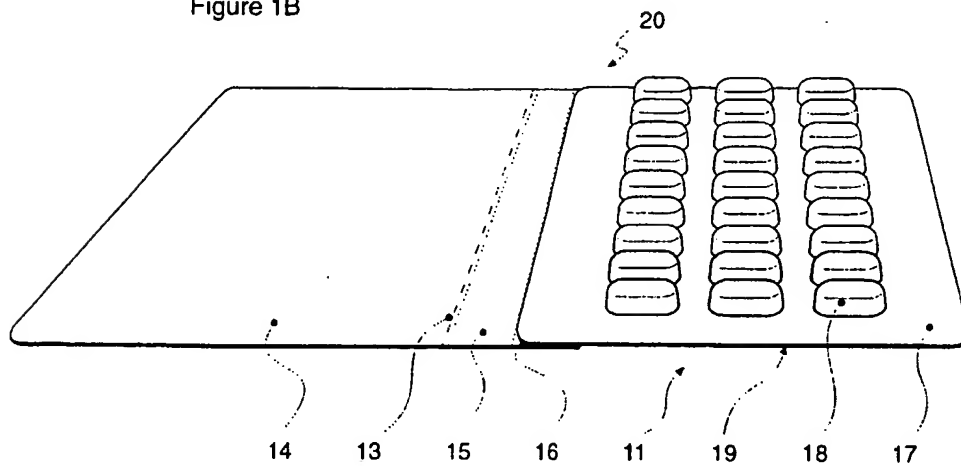


Figure 1B



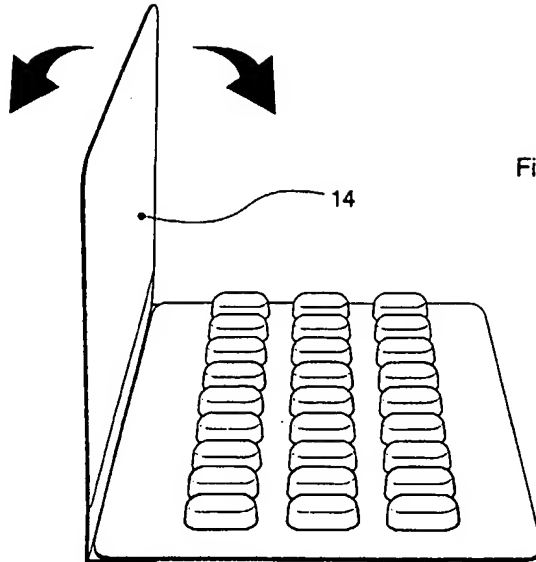


Figure 2A

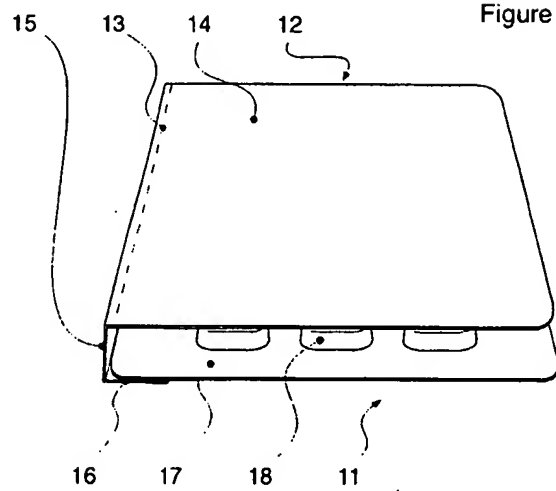


Figure 2B

Figure 3A

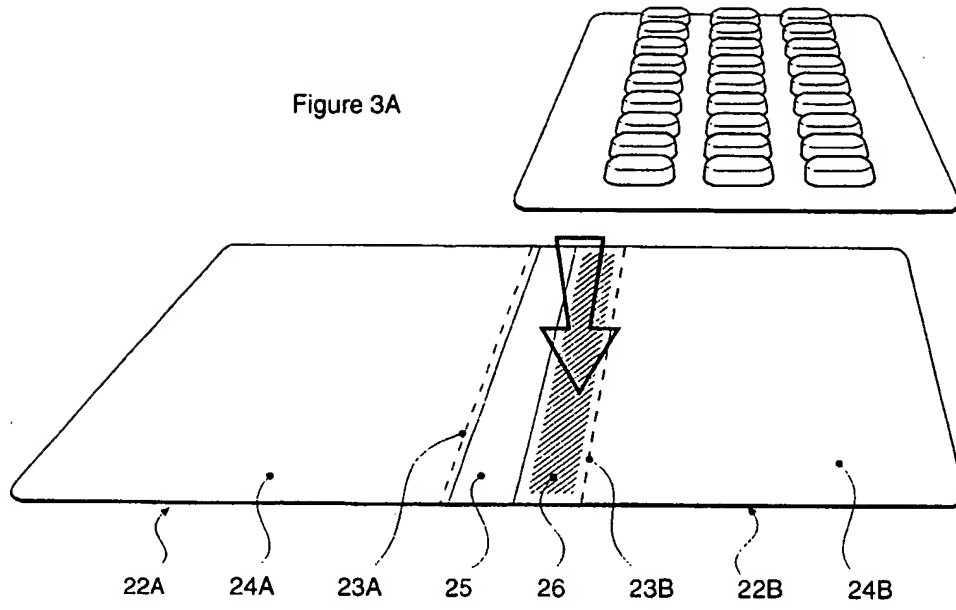


Figure 3B

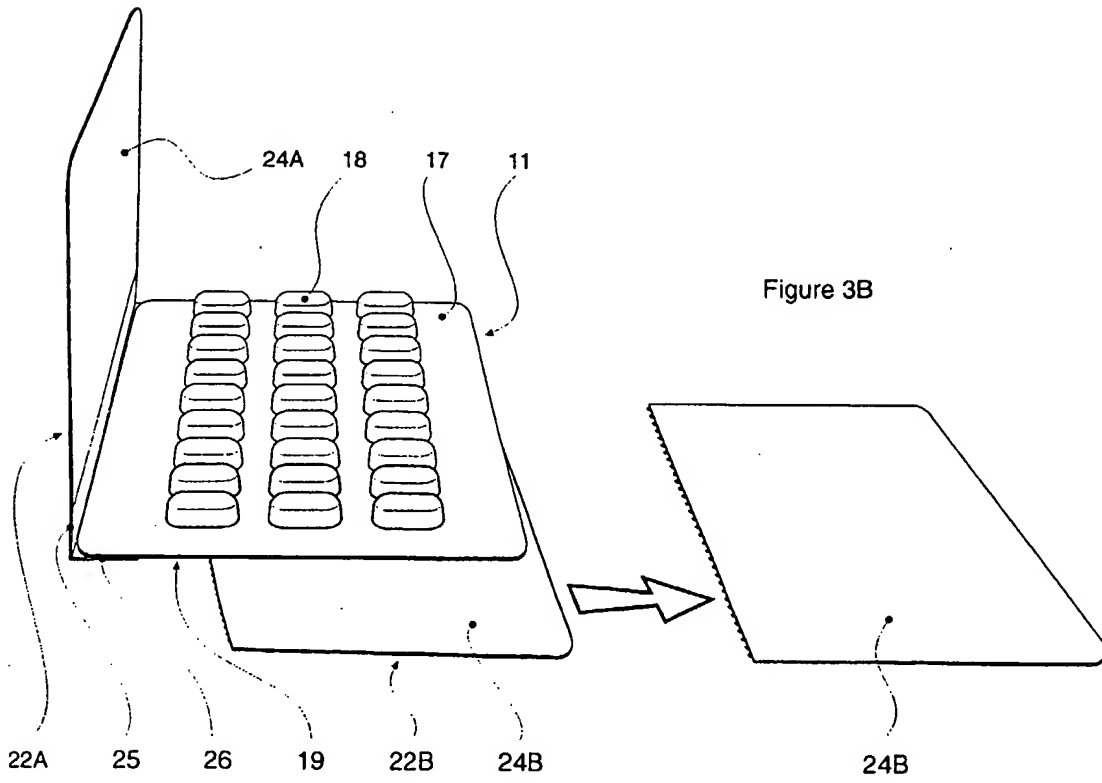


Figure 4A

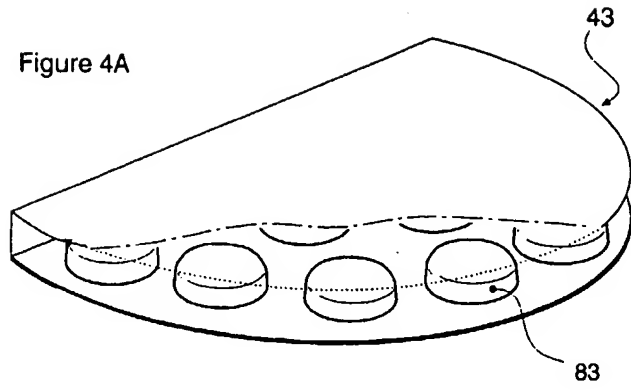


Figure 4B

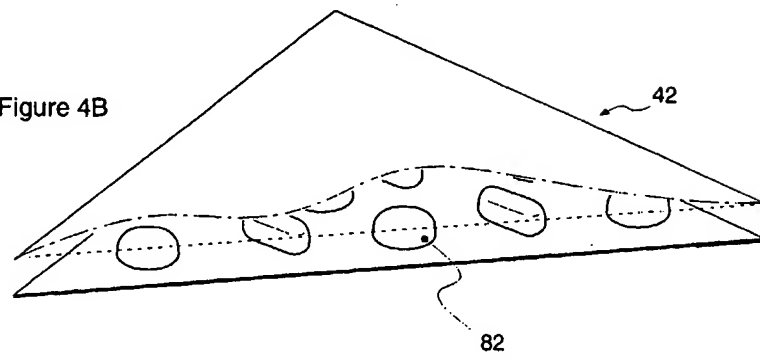


Figure 4C

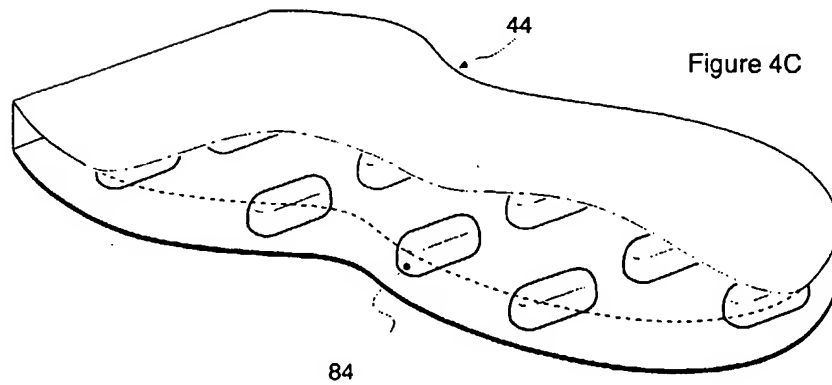


Figure 5A

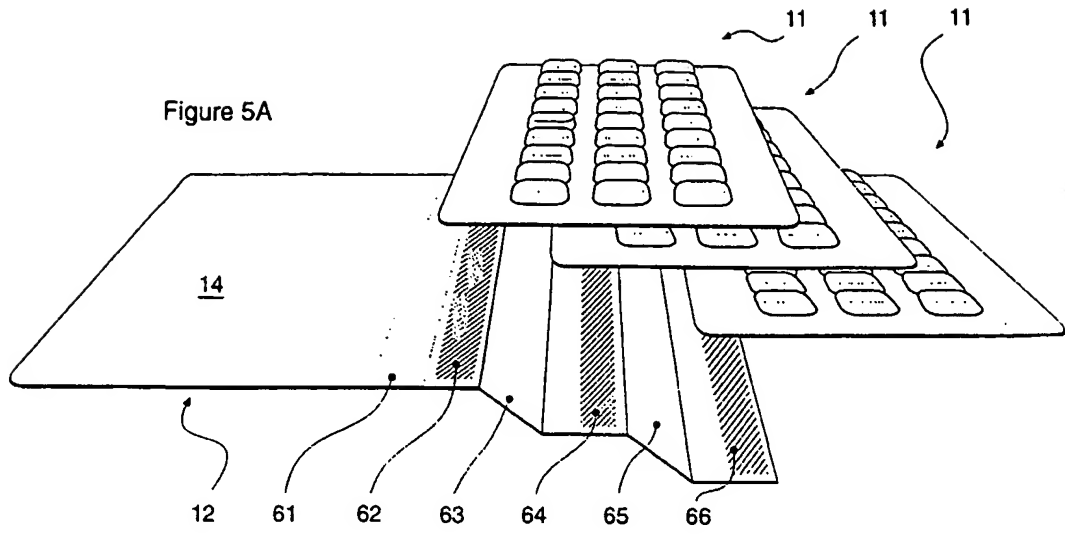


Figure 5B

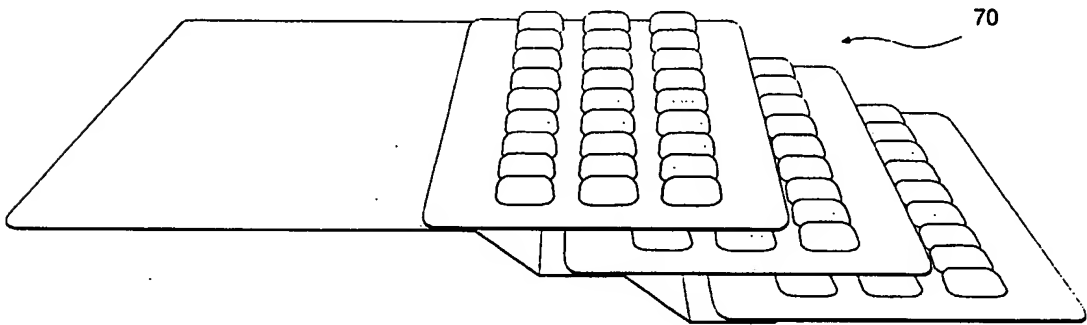


Figure 5C

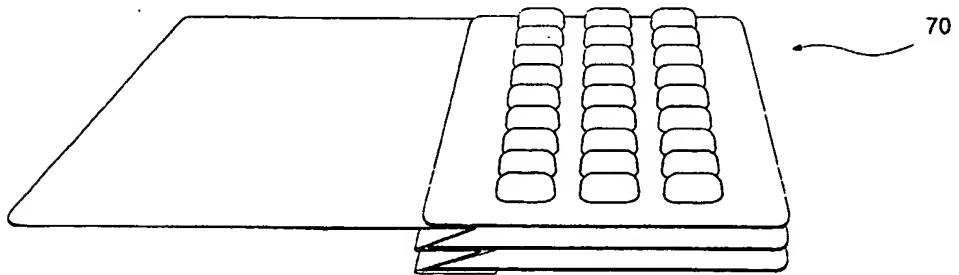


Figure 5D

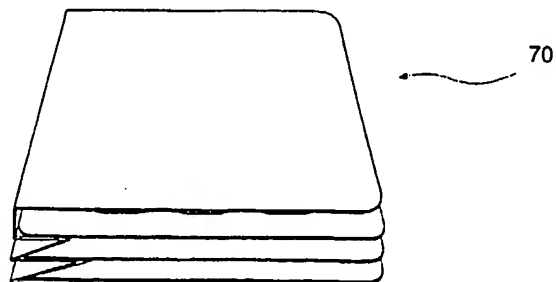


Figure 6A

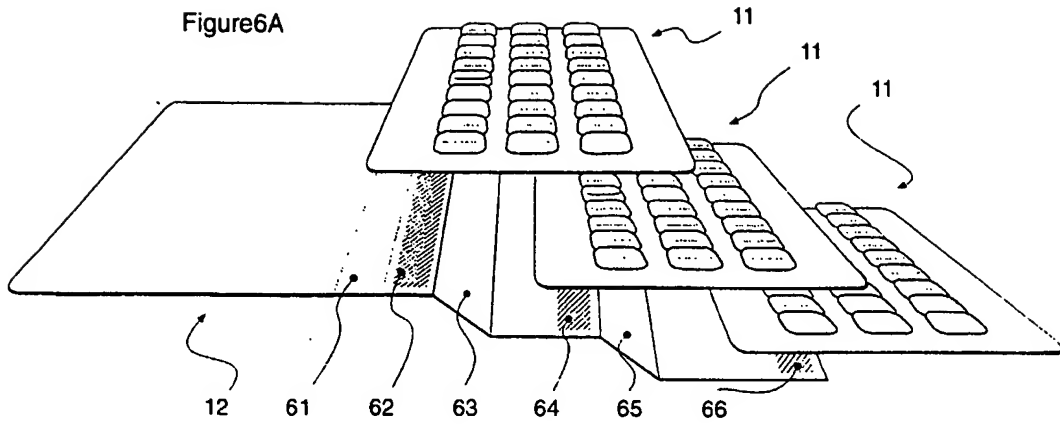


Figure 6B

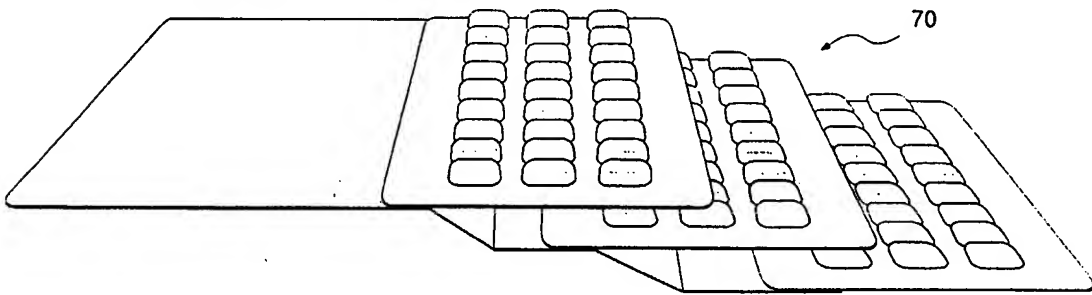


Figure 6C

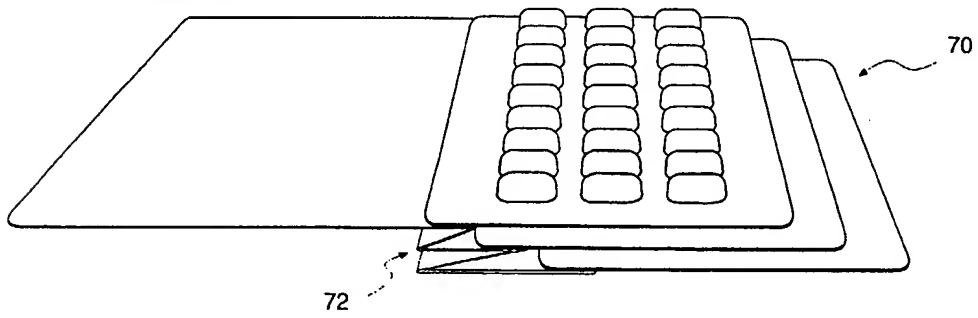


Figure 6D

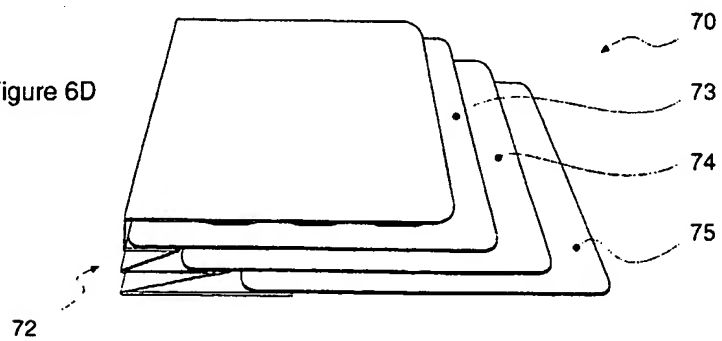


Figure 7A

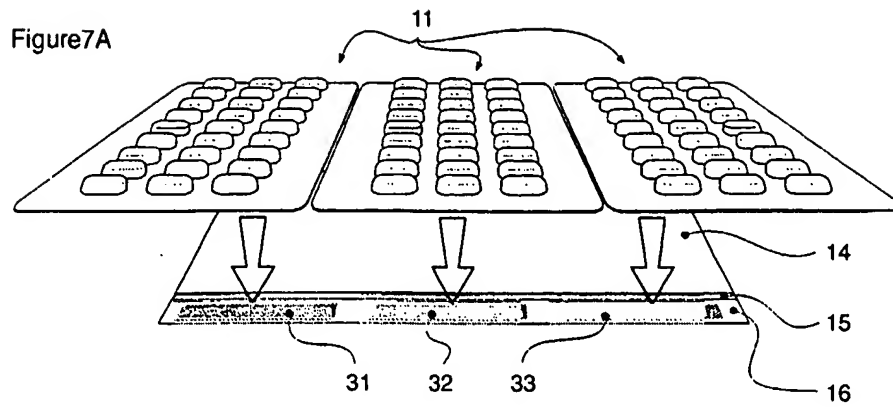


Figure 7B

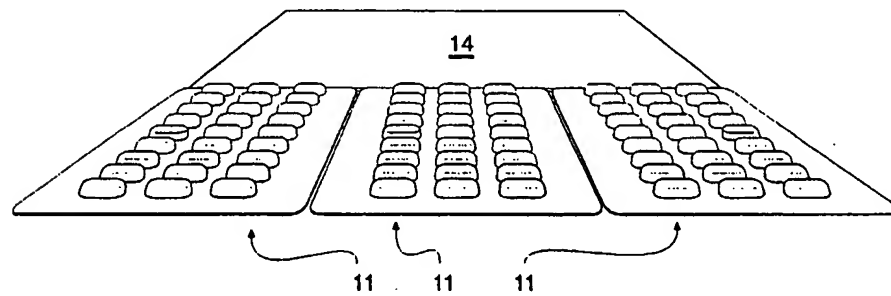


Figure 7C

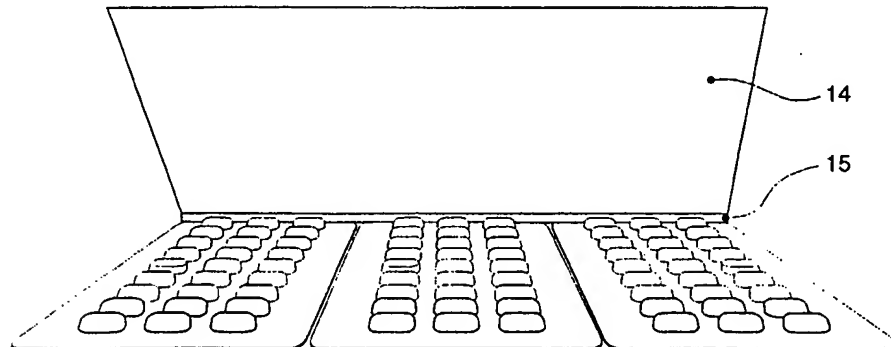
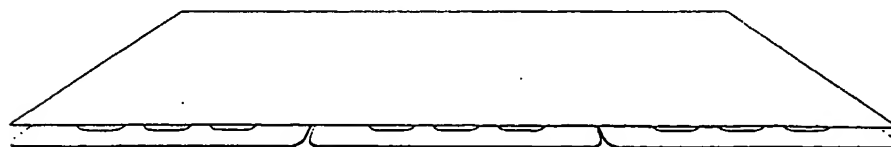


Figure 7D



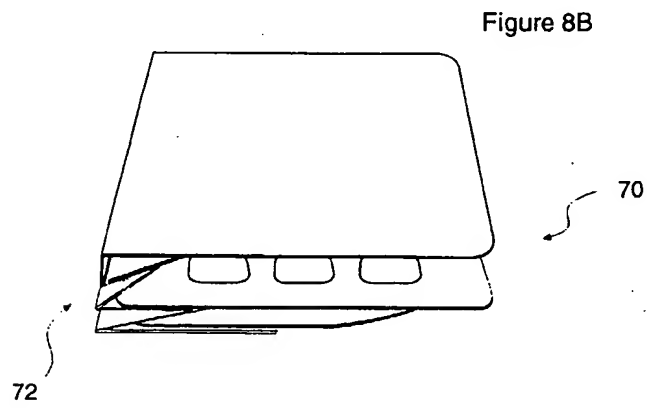
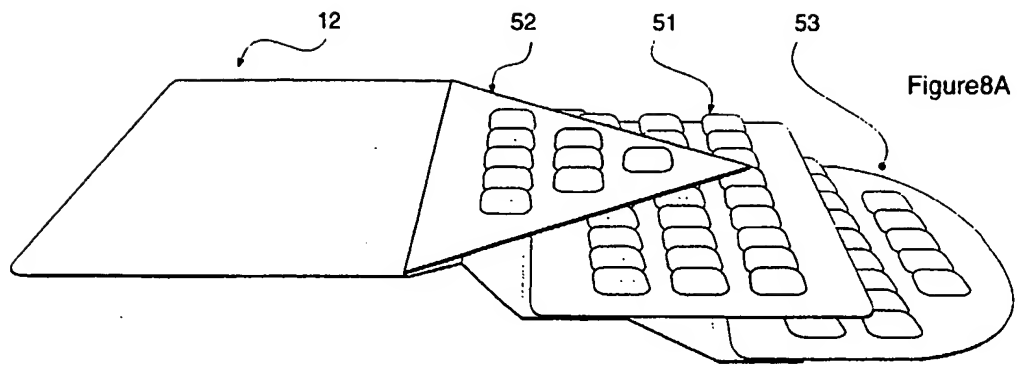


Figure 9A

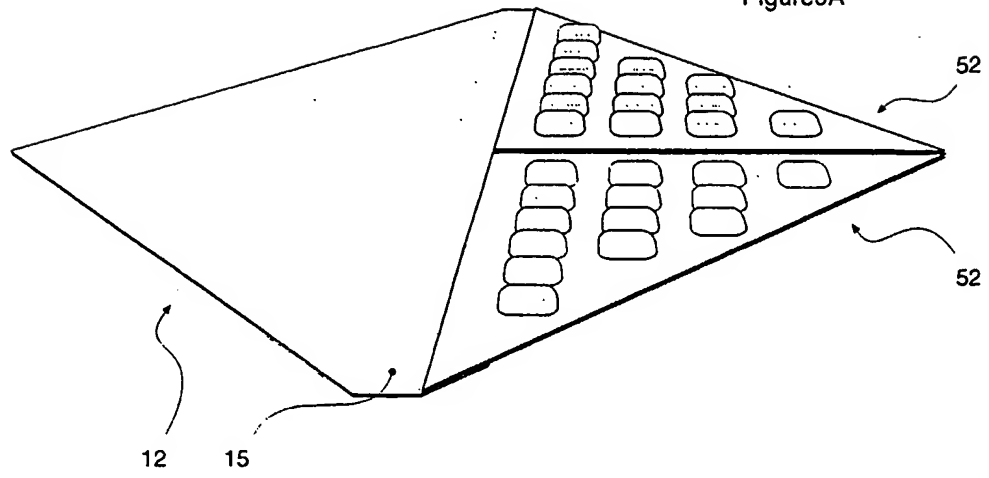


Figure 9B

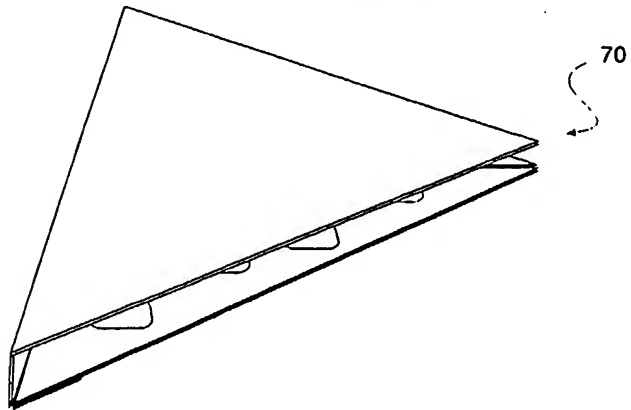


Figure 10

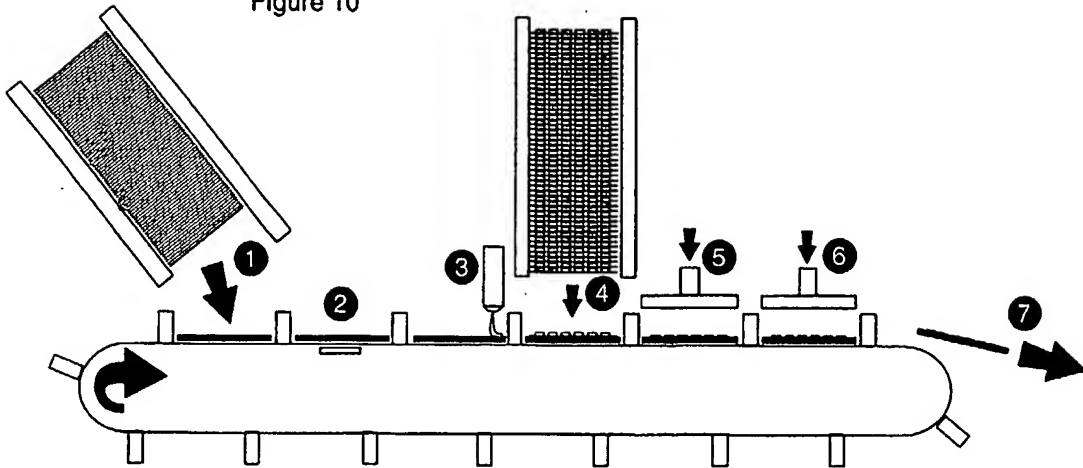
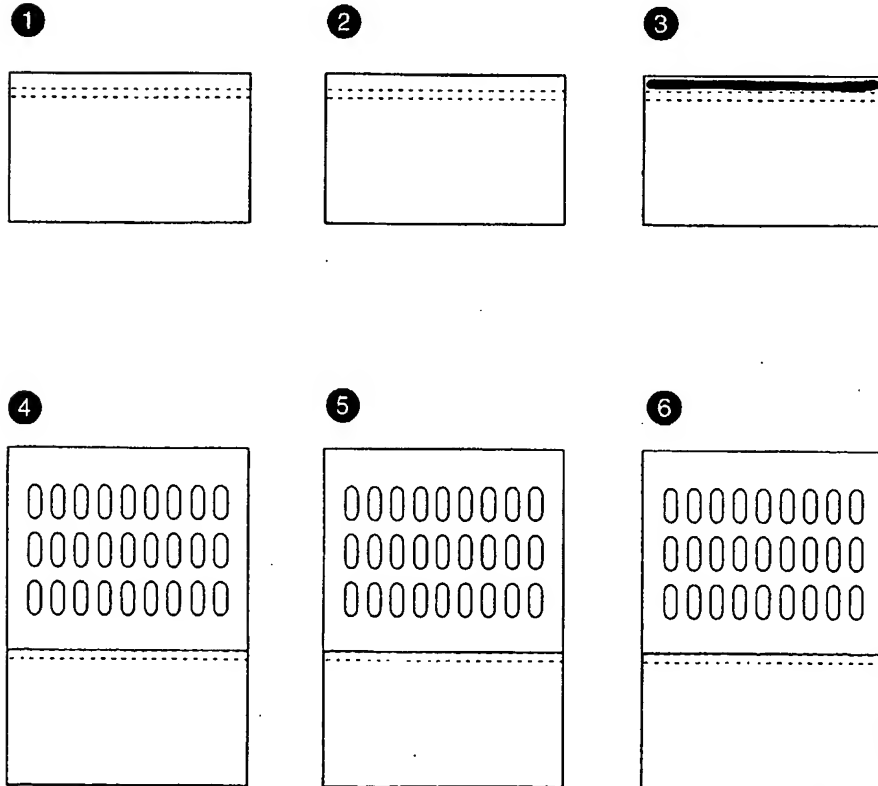


Figure 11



[Carded] Blister Pack Mounting

This invention relates to so-called 'blister packs' and is particularly, but not exclusively, concerned with blister pack mounting, capture or entrainment in, with or upon other elements or structures.

5 **Terminology**

Blister packs are pre-formed (typically moulded, resiliently deformable, synthetic plastics - eg PVC (polyvinyl chloride) or aluminum laminates (polyamide/aluminum/PVC) - shells, with a pre-formed array of multiple discrete pockets (or blisters), contoured for respective individual product items, typically a powder or granulated base in tablet or capsule form.

10

Product is captured or restrained within the pockets by a releasable or frangible backing layer, typically of metal (eg aluminum foil), metallized plastics foil or a paper foil combination.

The backing layer allows selective discharge, by depressing and deforming the associated blister shell moulding, from the opposite side, to displace an individual product through the locally ruptured foil.

15

Vulnerability

As such, blister packs are vulnerable to inadvertent (impact or abrasion) contact damage and consequent unintentional pack rupture and attendant product fracture, fragmentation, or displacement and loss.

20

Wallet Card

To counter this, it is known to mount blister packs within a carded 'wallet' - effectively a protective envelope, pocket, pouch, wrap or shroud.

The wallet also provides space for the addition of detailed text information and patient instructions.

Such a wallet is convenient for personal storage in garment pockets, handbags, purses or wallets.

- 5 Known such wallet card structures envelope the blister pack, with card leaves on opposite sides.

The card wallet can be configured to allow product discharge without removing the blister pack.

- 10 To this end, one card leaf may incorporate an array of apertures corresponding to that of the blisters, to allow their contents locally to penetrate the card.

In one known card sandwich configuration, a blister pack entrained between opposed cards may feature corresponding aligned sets of apertures in both cards, one accommodating the blisters, the other for product discharge.

- 15 A further protective hinged fly leaf card completes the wallet to inhibit inadvertent contact discharge.

The card may literally be of cardboard - ie (relatively thick and stiff) paper (pulp and fibre) product - or other substitute materials, including synthetic plastics and multi-layer composites.

- 20 In a particular - albeit elaborate - walleting method, WO 00/501511 (Covance), ultra-sonic welding is employed to edge bond a polymer coated card to a blister pack, to prescribed constraints - namely, a seam width of $\leq 8\text{mm}$, located $\geq 12\text{mm}$ from the nearest medicament, and an ultrasound exposure time of ≤ 2 seconds.

Pharmaceuticals

5 Blister packs are commonly employed for packaging and dispensing pharmaceutical products - and are favoured over loose product, or bottled tablets or capsules, in prescription dispensing, for certainty in quantity dispensed, security of storage and convenience of consumption - hence improved prospect of compliance.

Clinical Trials

10 It is known to adopt bespoke blister packs for so-called 'clinical trials' - a research technique prior to product launch, where (comparative and absolute) product performance and dosage regimes are evaluated in a strictly regulated scheme, over a designated patient study group, for an assessment of efficacy, side effects and safety.

Sometimes a pharmaceutical is substituted by a non-active product, or so-called 'placebo'.

Information & Instructions

15 Information and instructions are commonly printed upon the blister pack - for example a daily dosage and compliance regime.

For clinical trials, some provision for return of completed information, by the patient and/or investigator/clinician may also be desirable to facilitate evaluation.

Production

20 Machines dedicated to blister pack production are capable of high speed operation and are of sophisticated construction.

Accordingly, their use is only justifiable economically for long production runs of consistent pack format - that is without frequent interruption for re-setting.

However, subsequent blister and card handling, relative orientation and assembly steps for packaging, pack mounting, or wallet pack assembly and insertion, are generally more elaborate and cumbersome - and so much slower to effect.

5 Thus blister pack carding may prove either incompatible, or slow blister pack production, possibly to uneconomic levels, for short runs, such as may be dictated by clinical trial studies.

Some aspects of the present invention are concerned to achieve a carded blister pack capable of high speed assembly, and the attendant machines and processes.

Statement of Invention

10 According to one aspect of the invention,
a mounting card
and blister pack,
are [mutually] edge entrained -
by airless, contact, thermo-setting or chemically cured adhesive.

15 Thus, for example, a blister pack may be bonded at one edge to a corresponding opposed edge of a mounting card.

Mounting card may be cardboard and /or plastics.

Mounting card may be translucent (plastics) or opaque.

20 Conveniently, some marginal overlap between card and blister pack allows application of an adhesive strip or band - as a form of contact spine.

Adhesive may peel apart, to allow separation of blister pack and mounting card, without need for a severance line.

In mass production, a stack of mutually-aligned such cards may be stored in a magazine, ready for sequential discharge and individual presentation to a designated

blister pack.

Presentation requires mutual alignment of card and blister pack, together with marginal edge overlap.

- 5 Prior to contact, a layer of (airless, contact, thermosetting or chemically cured) adhesive is applied to either, or both, card and blister - whereupon the corresponding card and blister edges are pressed and held together.

Alternatively, mounting card and blister pack may be solvent bonded, welded or fused along marginal edge overlap.

- 10 A flat platen or rotary (squeeze) roller, individually or in mutual opposition, may be used, with local pressure application, by virtue of the surface profile.

In a folding station, the card is turned to overlie, or underlie, the blister pack - forming a book jacket, with one panel of card and the other of blister pack.

- 15 Folding may be prefaced by preliminary creasing, or scoring, about a fold line, locally to weaken the material and pre-dispose it to 'clean' folding, that is without wrinkles or creases.

In practice, the fold line can lie within the card, and (just at or) beyond the blister margins - leaving the blister itself intact.

The card thickness is chosen to provide sufficient residual mechanical robustness upon folding.

- 20 A score or perforation line may be incorporated - again most conveniently in the card itself - to facilitate detachment of the card from the blister, as a return element in the context of a clinical trial outcome.

In a particular construction, a (discharge) conveyor carries the carded blister assembly away from the jointing or joint bonding station, to an optional folding area and thence

to a collating station.

At a collating station, the carded blisters are discharged and stacked in succession, ready for transit and storage.

5 The stack may be bound together, such as by a strap, tie, or wrap and/or inserted in a carton.

The cards - and indeed the blister packs - may be pre-printed before assembly, or printed at a printing station as an integrated step in the assembly sequence.

Assembly integrated printing may be of additional information, such as a batch code and date identifier, upon an otherwise pre-printed card and/or blister pack.

10 One carded blister pack variant is configured as a book jacket, with a central (mounting) spine, overlaid with adhesive, for attachment to an edge of a (pre-formed or pre-fabricated) blister pack, and card panels disposed as opposed leaves about the spine, with folds or creases, to allow mutual over-folding.

15 In such a configuration, either or both panels or leaves may be severed from a residual spine by a pre-formed perforation or score line.

For ease of mechanised assembly, one panel may be out-turned and folded back upon itself, about a spine edge, to underlie the other, and present the spine and a locally overlaid adhesive layer for blister pack mounting.

20 So presented, the folded double card or book jacket thus equates to the single card mounting configuration.

The out-turned panel is return folded back about the spine to underlie the blister pack once mounted.

Multiple - similar or disparate - blister packs may be mounted upon a common spine.

Moreover, multiple spines may be employed.

An example would be mutually concertina-folded spines, with respective blister pack mounting strips.

5 Spines may be stacked overlying and/or mutually staggered or laterally offset for ease of folding and access.

Embodiments

There now follows a description of some particular embodiments of the invention, by way of example only, with reference to the accompanying diagrammatic and schematic drawings, in which:

10 Figures 1A and 1B show successive assembly stages for a carded blister pack;

More specifically:

Figure 1A shows juxtaposition of a discrete card element and a blister pack to be entrained thereby, with marginal corresponding edge overlap;

15 Figure 1B shows an assembled card and blister pack, with marginal overlapped edges mutually bonded;

Figures 2A and 2B show successive stages in folding over and closing together a carded blister pack;

More specifically:

20 Figure 2A shows an initial stage of card element folding, about a crease line, alongside a (adhesively) bonded spine portion;

Figure 2B shows closure of the card element to overlie the blister pack, as a book, book cover (leaf) or book jacket configuration;

Figures 3A and 3B show successive stages in assembly of a variant carded blister construction to that of Figures 1A through 2B;

More specifically:

5 Figure 3A shows juxtaposition of a double-panelled card (in the form of a book jacket) and a blister pack, with an edge overlapped upon a central spine strip;

Figure 3B shows an assembled double card (jacket) and blister pack, with one panelled element severed along a spine edge and separated - as a return portion;

Figures 4A through 4C show variant configurations of carded blister pack to those of Figures 1A through 3B;

10 More specifically:

Figure 4A shows a semi-circular carded blister pack profile;

Figure 4B shows a triangular carded blister pack profile; and

Figure 4C shows a waisted, curvilinear carded blister pack (dumbbell) profile;

15 Figures 5A through 5D show successive assembly stages of a multiple-spine, carded blister variant, in which stacked, mutually-overlapping spine folds are entrained to respective individual blister packs;

More specifically:

20 Figure 5A shows a multiple-spine mounting card, with spine segments (presenting attendant adhesive strips) spread apart and juxtaposed with respective multiple individual blister packs;

Figure 5B shows the multiple-spine mounting card of Figure 5A with blister packs located upon respective individual spine segments;

Figure 5C shows concertina-folding, into a mutually-overlapping stack, of the (splayed) spine segments of Figures 5A and 5B;

Figure 5D shows full closure of the single card mounted multiple blister pack assembly, following the steps of Figures 5A through 5C;

- 5 Figure 6A through 6D show corresponding assembly and closure stages, for a multiple-spine, carded blister variant of Figures 5A through 5D, in which successive spine folds are somewhat staggered, or mutually-offset laterally, to facilitate ease of access to mounted blister packs;

More specifically:

- 10 Figure 6A shows a multiple-spine mounting card with differential width spine segments (presenting attendant adhesive strips), juxtaposed with multiple individual blister packs;

- 15 Figure 6B shows the multiple-spine mounting card of Figure 6A with blister packs disposed (in situ), in laterally staggered or mutually offset relative positions, upon respective individual spine segments;

Figure 6C shows concertina-folding, into a mutually part-overlapping, progressively marginally offset, stack of the spine segments of Figures 6A and 6B;

- 20 Figure 6D shows full closure of the single card mounted multiple blister pack assembly following the steps of Figures 6A through 6C, with successive stacked blister packs marginally laterally offset, to present exposed outer edges, in the manner of a card index file.

- 25 Figures 7A through 7D show successive assembly and closure stages for a single spine, single card, multiple blister pack variant, in which multiple individual blister packs - in this example of generally similar rectangular form - are mounted in tandem, juxtaposed upon respective adhesive pads, spread (evenly) along a common spine;

More specifically:

Figure 7A shows an initial stage in juxtaposition of multiple individual blister packs upon respective adhesive mounting pads;

5 Figure 7B shows the multiple blister packs of Figure 7A overlaid upon the common card spine; the blister packs could be mounted simultaneously under one press tool (not shown) or successively, by relative displacement of the assembly and/or tool;

Figure 7C shows the common (multiple blister pack) mounting card folded about the common spine;

10 Figure 7D shows conclusion of card folding of Figure 7C to form a common cover for multiple blister packs;

Figures 8A and 8B show a variant configuration of a multiple-spine carded blister pack of Figure 5A through 5C, employing disparate blister pack configurations.

More specifically:

15 Figure 8A shows a multiple-spine mounting card, with disparate blister packs - triangular, rectangular, and semi-circular - located upon respective individual spine segments;

Figure 8B shows concertina folding, into a mutually overlapping stack, of the (splayed) spine segments and closure of the common card cover of Figure 8A;

20 Figures 9A and 9B show a variant configuration of a single spine, single card, multiple blister pack of Figures 7A through 7D;

More specifically:

Figure 9A shows multiple triangular blister packs mounted upon a common spine of triangular card;

Figure 9B shows closure of the common triangular cover card over multiple, entrained, triangular blister packs.

Figure 10 shows a part-sectioned, part cut-away, side elevation of a bespoke machine for assembly of carded blister packs according to Figures 1A through 9B;

- 5 Figures 11(1) through 11(6) show successive stages, designated (1) through (6) respectively in Figure 10, in assembly of a single blister pack upon a mounting card, such as by using the machine of Figure 10;

More specifically:

- 10 Figure 11(1) shows a mounting card initially deposited upon a conveyor from an overhead stacked storage magazine;

Figure 11(2) shows the mounting card of Figure 11(1) placed on the conveyor, its presence is confirmed, and then transferred along the conveyor;

Figure 11(3) shows deposition of a strip of adhesive, from a discharge gun, upon the spine of the mounting cards of Figures 11(1) and 11(2);

- 15 Figure 11(4) shows deposition of a blister pack, discharged from an overhead stacked storage magazine, upon the mounting card with adhesive coated spine achieved in Figure 11(3);

Figure 11(5) shows a compression platen, or press compaction, of the adhesive bonded blister pack and mounting card of Figure 11(4);

- 20 Figure 11(6) shows optional further compression and/or spine folding for the card mounted blister of Figure 11(5), prior to card blister discharge (7) Figure 10.

Referring to the drawings - in particular Figures 1A and 1B - a carded, or card mounted, (single) blister pack assembly 20 comprises a mutually-entrained card element 12 and pre-formed (and pre-filled and sealed) individual blister pack 11.

The blister pack element 11 comprises a plastics sheet 17, with an array of pre-formed discrete pockets or compartments 18, backed by a frangible layer of metal foil 19.

The card element 12 comprises a panel 14, a (double) hinged spine segment 15 and an adhesive (peripheral) edge mounting strip 16.

- 5 A crease or fold line 29 separates or sub-divides the mounting strip 16 from the spine segment 15.

Similarly, a crease or fold line 28 separates or sub-divides the spine segment 15 from the panel 14.

An optional perforation line 13 is marginally inset from the crease 28.

- 10 The panel 14 and spine segment 15 can be separated by a relative tearing action along this perforation line 13.

A corresponding double card(ed) 22A, 22B, blister pack variant, as shown in Figure 3A and 3B, includes two removable card panels 24A, 24B.

- 15 Panels 24A, 24B can be severed along respective perforation lines 23A and 23B, offset marginally from a (double) hinged intervening spine 25, and adhesive strip 26.

The mounting strip 16 can be regarded as an entrained (rear) binding or peripheral edge portion of an overall mounting spine.

The hinged spine segment 15 performs a (upstand) spacer role in the final assembly of card and blister pack, as shown in Figure 2B.

- 20 Mutual entrainment of card element 12 and blister pack 11 is through respective marginal edge overlap, by the width of the mounting strip 16.

Adhesive or bonding agent - such as hot melt glue - is applied over a prescribed portion of the mounting strip 16 as a mounting pad.

A continuous line of adhesive, and/or multiple discrete pads (not shown), may be employed.

The adhesive 16 may be a tacky, contact or impact (airless setting) type, or thermosetting - requiring heat application to activate and cooling to harden.

- 5 Adhesive, or bonding agent, is conveniently applied to the card 12, but may instead, or additionally, be applied to the blister pack 11 itself.

In this case, the card element 12 is of cardboard (ie a paper, or pulped fibre type of product), of a thickness or gauge and constitution sufficient to impart a desired stiffness, for a role of protective cover.

- 10 However, synthetic plastics sheet material may supplement, reinforce or substitute for cardboard.

Composite, fibre-reinforced or laminated constructions may be used.

The cardboard may be (surface) coated or sealed, for example by varnish coating or laminated film covering (not shown), for moisture resistance.

- 15 Single-Spine, Multiple Blister Pack

Figures 1A through 4C show single-spine, single carded blister pack configurations.

In particular, Figures 4A through 4C show disparate blister pack contours 42, 43, 44, embodying disparate individual blister forms 82, 83, 84 respectively.

- 20 For a single-spine, multiple blister pack variant, the mounting strip 16 length of a single (common) mounting card 14 could be sub-divided into mounting portions 31, 32, 33, as shown in Figures 7A through 7D.

These spine mounting portions could in turn be allocated to different individual blister packs 11.

The packs 11 themselves could be correspondingly smaller in span, or incorporate small-span protruding mounting tabs.

Again, disparate individual pack profiles and/or blister forms could be employed, as with Figures 4A through 4C.

- 5 Figures 7A through 7D and 9A, 9B show variant such blister pack combinations upon a common spine.

Multiple Spine

The assembly sequences of Figures 5A through 5D, 6A through 6D, and 8A, 8B, show variant multiple-spine, (single or common) carded blister assemblies.

- 10 A single mounting card 12 is concertina - folded at one side into multiple spine segments 61, 63, 65 - alternating with intervening adhesive mounting strips 62, 64, 66.

One (or more) blister packs 11 is allocated to each spine segment 61, 63, 65, or rather the attendant juxtaposed adhesive mounting strip 62, 64, 66.

- 15 In an initial mounting configuration - reflected in Figures 5A and 5B - card and spine segments 61 63, 65 are laid flat, or slightly stepped and mutually offset laterally.

The mounting strips 62, 64, 66 are thus presented somewhat spread apart, ready for mounting respective blister packs 11.

- 20 Upon blister pack 11 mounting, the spine segments and intervening mounting strips 61 through 66 are concertina-folded into a stacked overlying array, as reflected in Figure 5A.

Folding over the (face/cover) card panel 14 to overlie the stack, as represented in Figure 5D, completes the assembly 70.

In this way, a multiple (independent) leaf book array of blister packs 11 can be achieved, as reflected in Figures 5C and 5D.

A slight spine segment splay accommodates the depth of each individual blister pack 11, without straining the spine or distorting the stack.

- 5 Figures 8A, 8B show disparate profile blister packs 51, 52, 53 mounted upon respective spine segments.

Thus blister pack 51 has a rectangular profile, as with the blister packs 11 of Figures 1A through 3B and 5A through 7D.

- 10 On the other hand, blister pack 52 has a triangular profile, apex outward, as with the blister packs of Figures 4B and 9A, 9B.

Further blister pack 53 has a concave curved outer edge profile, as with the semi-circular blister pack of Figure 4A.

The blister packs 51 through 53 can thus readily be differentiated (indeed by touch alone) - for ease of identification when different products are presented.

- 15 As with Figures 4A through 4C, or indeed any of the variants depicted, different product shapes and sizes, conveniently representing different ingredient products, may be presented upon the same of different blister packs.

Staggered Stack

- 20 For ease of access to individual blister pack (leaves) in a multiple carded stack, they could be staggered, or marginally offset laterally, as depicted in Figures 6A through 6D, by adopting a progressively varied spine segment width or depth.

This preserves a common master binding edge 72 when the overall pack assembly 70 is closed, yet allows the opposite free edges 73,74,75 of the blister pack leaves to protrude differentially, in the manner of a card index - as reflected in Figure 6D.

Diverse permutations and combinations of segmented spine mounting, concertina spine segment folding, and pack outline contour variations could be employed - although not illustrated.

5 As evoked in Figure 10, yet another aspect of the invention addresses a bespoke or dedicated (cartoner, or cartoning) machine, for assembling mounting cards and blister packs.

In practice, it is envisaged that cards and blister packs would be produced (pre-fabricated) elsewhere and loaded, cartridge-fashion into stacked storage magazines - from which the machine incrementally draws off stock.

10 Magazine contents may be drawn from the stack top or bottom (as illustrated).

The cards could be pre-creased, pre-scored or folded, and pre-perforated, or some of these features could be introduced as machine stages, prior to and/or after assembly with a blister pack.

15 Similarly, post-assembly, the card cover may be left flat, or folded to overlie the entrained blister pack, by an additional machine stage, prior to discharge.

A printing station (not shown) may be employed, to add local date/time, content and batch code, as part of a production audit trail.

Space is left on the card and/or blister pack (aside from any generalised pre-printing) for such local data printing.

20 The card blister assembly may be discharged to a separate (cartoner) packing stage - for insertion into a final overall wrap or carton, along with a Patient Information Leaflet (PIL).

Assembly of mounting card and blister is a matter of precise incremental indexing, (linear) alignment, layer deposition, juxtaposition and closing of elements.

As such, assembly may be undertaken reliably and consistently at high speed, but in short batch runs.

The attendant production economics are suitable for bespoke carded blister packs as required for low-volume clinical trials.

- 5 Similar assembly principles may be adopted for the multiple (similar or disparate) blister packs upon a common spine, or single or multiple (similar or disparate) blister packs upon stacked spine variants, addressed Figures 1A through 9B.

For ease of access and assembly, pack installation can be undertaken with multiple individual spine segments pulled apart and laid flat.

- 10 Effectively, a repeat of single blister pack single card mounting step is undertaken for each spine and each blister pack location.

The more complex corrugated spine fold configuration is adopted after assembly.

Component List

- | | | |
|----|-----|---|
| | 11 | blister pack |
| 15 | 12 | mounting card |
| | 13 | perforation/severance line |
| | 14 | panel |
| | 15 | spine |
| | 16 | mounting/adhesive strip |
| 20 | 17 | plastics sheet |
| | 18 | blister compartment |
| | 19 | (metal) foil backing layer |
| | 20 | card mounted (single) blister pack assembly |
| | 22A | mounting card |
| 25 | 22B | mounting card |

	23A	severance line
	23B	severance line
	24A	panel
	24B	panel
5	25	spine
	26	adhesive strip
	28	fold line
	29	fold line
	31	mounting portion
10	32	mounting portion
	33	mounting portion
	42	triangular carded blister pack assembly
	43	semi-circular carded blister pack assembly
	44	dumbbell carded blister pack assembly
15	51	rectangular blister pack
	52	triangular blister pack
	53	semi-circular blister pack
	61	spine
	62	adhesive strip
20	63	spine
	64	adhesive strip
	65	spine
	66	adhesive strip
	70	card mounted (multiple) blister pack assembly
25	72	master binding edge
	73	protruding blister pack edge
	74	protruding blister pack edge
	75	protruding blister pack edge
	82	individual blister form
30	83	individual blister form
	84	individual blister form

Claims

1.

5 A [mutually] edge entrained -
by airless, contact, thermo-setting or chemically
cured adhesive -
mounting card and
blister pack assembly.

2.

10 A carded blister pack [assembly] comprising
a mounting card (12),
with a [hinged] spine segment (15),
and an adhesive portion (16),
overlaid by a pre-formed blister pack (11),
configured to allow a card leaf or panel to fold over,
15 upon the blister pack, as a [hinged] protective cover.

3.

A carded blister pack,
as claimed in either of the preceding claims,
including a crease or fold line,
20 between spine (segment) and adhesive portion,
to facilitate card over-turn about the spine,
to overlie the blister pack.

4.

A carded blister pack,
as claimed in any of the preceding claims,
including a localised weakening, perforation or
severance line,
in the card body,
[such as adjacent the spine segment],
to facilitate severance of a card portion,
from the blister pack.

10

5.

A carded blister pack,
as claimed in any of the preceding claims,
with a mounting card configured as a [book] jacket,
having mutually hinged panels or leaves,
disposed about an intervening spine,
at opposite sides of the blister pack.

15

6.

A carded blister pack,
as claimed in any of the preceding claims,
incorporating multiple spines, or spine segments.

20

7.

A carded blister pack,
as claimed in any of the preceding claims,
incorporating a concertina-folded, multiple spine.

8.

5 A carded blister pack,
as claimed in any of the preceding claims
with staggered, or mutually-offset,
multiple spine, or spine segment, folds.

9.

A carded blister pack,
as claimed in any of the preceding claims,
with multiple blister packs upon a common spine.

10 10.

15 A carded blister pack,
as claimed in any of the preceding claims,
with differential blister packs
upon a common single spine,
or multiple spines.

11.

20 A carded blister pack,
substantially as hereinbefore described,
with reference to, and as shown in,
the accompanying drawings.

12.

A machine for assembly of carded blister packs,
as claimed in any preceding claim,
with a mounting card storage magazine,
5 and a blister pack storage magazine,
a conveyor for transferring mounting cards,
discharged individually in succession
from the mounting card storage magazine,
through an intervening adhesive application station,
10 into juxtaposition with individual blister packs,
discharged individually in succession,
from the blister pack storage magazine,
to a post-assembly press station.



INVESTOR IN PEOPLE

Application No: GB 0021167.2
Claims searched: 1 & 3 to 11

Examiner: Mike Henderson
Date of search: 10 December 2001

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.S): B8P (PAX PK10)

Int Cl (Ed.7): A61J 1/03 B65D 75/36

Other: ONLINE:WPI,EPODOC,JAPIO

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	US 6024222 (FRIBERG et al) (Whole disclosure relevant)	1,3,5,6 & 9
X	DE 4429503A1 (KREFT) (Whole disclosure relevant)	1,3 to 6 & 9

X Document indicating lack of novelty or inventive step
Y Document indicating lack of inventive step if combined with one or more other documents of same category.

& Member of the same patent family

A Document indicating technological background and/or state of the art.
P Document published on or after the declared priority date but before the filing date of this invention.
E Patent document published on or after, but with priority date earlier than, the filing date of this application.